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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**



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First Named Inventor:	Sallaway, Peter J.	Filing Date:	28 April 2000
Group Art Unit:	2611	Examiner:	Tran, K.
Atty. Docket No.:	M-5628 US		
Title:	System and Method Suitable for Receiving Gigabit Ethernet Signals		
Assignee(s):	National Semiconductor Corporation		

Mountain View, California  
14 March 2007

**CERTIFICATE OF CORRECTION BRANCH**  
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**Certificate**  
**MAR 20 2007**  
**of Correction**

**LETTER RE CORRECTIONS TO DRAFT OF PATENT  
BEING REPRINTED UNDER 35 USC 254 AND 37 CFR 1.322  
WITH ADDITIONAL CORRECTIONS UNDER 35 USC 255 AND 37 CFR 1.323**

Sir:

Given below in connection with the above patent is a description of errors located in the patent draft faxed 6 February 2007 to Applicants' Attorney for reprinting this patent. All of the column and line numbers given below for errors in the specification apply to the specification of the 6 February 2007 patent reprint draft. Similarly, all of the claim numbers and associated line numbers given below for errors in the claims apply to the claims of the patent reprint draft. The line number for the Abstract applies to the Abstract in the patent reprint draft.

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## IN THE SPECIFICATION

Col. 4, line 50, "a first host **150**" should read "first host **150**"; i.e., "a" should be deleted immediately before "first host **150**";

Col. 11, lines 31 - 33, "The output samples from delays **601-1** through **601-R** is also input to multipliers **602-1** through **602-R**, respectively" should read "The output samples from delays **601-1** through **601-R** are also input to multipliers **602-1** through **602-R**, respectively"; i.e., "is" should read "are";

Col. 11, line 64, " $Y_{k-j}$ " should read " $y_{k-j}$ ";

Col. 12, line 40, "is given" should read "is then given";

Col. 14, line 27, "contains" should read "often contains";

Col. 14, line 43, "4-D decoder **900**" should read "a 4-D decoder **900**";

Col. 16, line 46, Eq. 15, " $r_{k,w} = \alpha_{k,w} + \alpha_1 \alpha_{k-1,w} + h_{k,w}$ " should read " $r_{k,w} = a_{k,w} + \alpha_{w,1} a_{k-1,w} + h_{k,w}$ "; i.e., " $\alpha_{k,w}$ " and " $\alpha_{k-1,w}$ " should respectively read " $a_{k,w}$ " and " $a_{k-1,w}$ " and, in conformity with Eq. 19 at col. 19, line 33, " $\alpha_1$ " should read " $\alpha_{w,1}$ ";

Col. 16, line 47, " $\alpha_{1,w}$ " should read " $\alpha_{w,1}$ " in conformity with Eqs. 15 and 19 that are intended to be the same equation;

Col. 17, line 43, " $M_{k,w}(7) = [r_{k,w} - (-2)]^2$ " should read " $M_{k,w}(7) = [r_{k,w} - (-1)]^2$ "; i.e., "(-2)" should read "(-1)";

Col. 18, line 20, Eq. 17, " $p_{k,w}(i) = \min_{j=\{-2,-1,0,1,2\}} \{p_{k-1,w}(j) + M_{k,w}((j+2)+5(i+2))\}$ " should read " $p_{k,w}(i) = \min_{j=\{-2,-1,0,1,2\}} \{p_{k-1,w}(j) + M_{k,w}((j+2)+5(i+2))\}$ "; i.e., a right parenthesis should be placed after " $((j+2)+5(i+2))$ " so that it reads " $((j+2)+5(i+2))$ ";

Col. 18, lines 20 and 21, it would be clearer to place "for  $i=\{2,1,0,-1,-2\}$ " fully on line 21 as done in the corrected substitute specification;

Col. 18, lines 47 and 48, it would be clearer to place "for  $i=\{2,1,0,-1,-2\}$ ;  $j=\{2,1,0,-1,-2\}$ " fully on line 48 as done in the corrected substitute specification;

Col. 19, line 34, "and  $h_k$  is the noise" should read "and  $h_{k,w}$  is the noise"; i.e., " $h_k$ " should read " $h_{k,w}$ " in conformity with identical Eqs. 19 and 15;

Col. 22, line 22, Eq. 24, " $p_{2_{k,w}}(i) = \text{second minimum } (p_{k-1,w}(j) + M_{k,w}(5(i+2) + (j+2)))$ " should read " $p_{2_{k,w}}(i) = \text{second minimum } (p_{k-1,w}(j) + M_{k,w}(5(i+2) + (j+2)))$ ";

$(p_{k-1,w}(j) + M_{k,w}(5(i+2) + (j+2)))$ "; i.e., " $p_{k-1,w}(j)$ " and " $M_{k,w}$ " should respectively be " $p_{k-1,w}(j)$ " and " $M_{k,w}$ ";

Col. 22, lines 22 and 23, it would be clearer to place " $j = \{-2, -1, 0, 1, 2\}$ " fully on line 23 as done in the corrected substitute specification;

Col. 25, line 10, "either a -1 or -1" should read "either a -1 or +1";

Col. 25, line 58, "on FIG. 18" should read "in FIG. 18";

Col. 26, line 9, " $\Delta_{k,w}(S)$ " should read " $\Delta_{k,w}(S)$ ";

Col. 27, lines 22 and 23, Eq. 33, " $T(Z) = \frac{1 + \alpha_1 Z^{-1} + \dots + \alpha_L Z^{-L}}{f(Z)}$ " should read

" $T(Z) = \frac{1 + \alpha_1 Z^{-1} + \dots + \alpha_L Z^{-L}}{f(Z)}$ "; and

Col. 28, line 61, "than" should read "then".

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IN THE CLAIMS

Claim 4, second line, "lookup" should read "lookup table";

Claim 9, eleventh line, "each multi-dimensional" should read "each multi-dimensional symbol";

Claim 19, eighteenth and nineteenth lines, "each predefined 1-D symbols" should read "each predefined 1-D symbol";

Claim 25, tenth and eleventh lines, "a associated reliability measure" should read "an associated reliability measure";

Claim 26, seventh line, "(--1)th time period" should read "(k-1)th time period"; and

Claim 31, first line, "claim 20" should read "claim 30".

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IN THE ABSTRACT

Twelfth line, "(103-j)" should read " $(x_{kj})$ ".

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## REMARKS

Correction of the errors at the following ones of the above-indicated locations brings the specification and claims of reprint draft of the above patent into conformity with (i) the corrected substitute specification submitted 20 December 2004 and (ii) the allowed claims as presented in the Amendment submitted 3 December 2003:

- a. Col. 4, line 50;
- b. Col. 11, lines 31 - 33;
- c. Col. 11, line 64;
- d. Col. 12, line 4;
- e. Col. 14, line 27;
- f. Col. 14, line 43;
- g. Col. 17, line 43;
- h. Col. 25, line 10;
- i. Col. 25, line 58;
- j. Col. 26, line 9;
- k. Col. 27, lines 22 and 23; and
- l. Claim 26, seventh line.

This also applies to the portion of the corrections at col. 16, line 46, for changing " $\alpha_{k,w}$ " and " $\alpha_{k-1,w}$ " respectively to " $a_{k,w}$ " and " $a_{k-1,w}$ ". Correction of all of these errors is requested under 35 USC 254 and 37 CFR 1.322.

Patentees' Attorney has noted three specification locations, namely, col. 18, lines 20 and 21, col. 18, lines 47 and 48, and col. 22, lines 22 and 23, where printing the indicated material in the same way as in the corrected substitute specification would make the text clearer.

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Correction of the errors at the remaining ones of the above-identified locations is requested under 35 USC 255 and 37 CFR 1.323 due to Patentee mistake\*.

More particularly, the subscripting differs slightly between Eqs. 15 and 19 in the specification as originally filed. However, Eqs. 15 and 19 both present the relationship for signal  $r_{k,w}$  provided from equalizer 1110 to sequence detector 1100 for an intersymbol interference length of one and are thus intended to be the same equation. Consequently, " $\alpha_1$ " in Eq. 15 at col. 16, line 46, and " $\alpha_{1,w}$ " at col. 16, line 47, should both read " $\alpha_{w,1}$ " as in Eq. 19. Similarly, " $h_k$ " at col. 19, line 34, should read " $h_{k,w}$ " as in Eqs. 15 and 19.

As can be seen by examining Eq. 17, it needs a right parenthesis directly after the term " $((j+2)+5(i+2))$ " at col. 18, line 20, in order for Eq. 17 to be mathematically correct. This can also be seen by examining Eq. 22 which has the same term " $((j+2)+5(i+2))$ " except that there is a right parenthesis after " $((j+2)+5(i+2))$ ".

Some of the subscripting was inadvertently lost in the version of Eq. 24 presented in the corrected substitute specification. Eq. 24 as given in the corrected substitute specification is repeated below followed by Eq. 24 as it appears in the specification as filed:

$$p2_{k,w}(i) = \text{second minimum } (pk-1,w(j) + Mk,w(5(i+2) + (j+2)))$$

$$p2_{k,w}(i) = \text{second minimum } (p_{k-1,w}(j) + M_{k,w}(5(i+2) + (j+2)))$$

As can be seen by examining these two versions of Eq. 24, several of the characters in the two terms " $pk-1,w(j)$ " and " $Mk,w$ " at col. 22, line 22, in the version of Eq. 24 given in the corrected substitute specification need to be converted to subscripts so that those two terms respectively appear as " $p_{k-1,w}(j)$ " and " $M_{k,w}$ ".

The word "than" at col. 28, line 61, in the sentence "From FIG. 20A, if the past L symbols have been properly decoded than the influence of intersymbol interference will be completely canceled" needs to be changed to "then" in order for that sentence to be grammatically correct.

Turning to the indicated correction to Claim 4, independent Claim 1 recites a "lookup table". Claim 4, which depends directly from Claim 1, currently recites that "the feedback

\* Patentees' Attorney notes that the PTO has made some of its own corrections in the patent reprint draft. For instance, the spaced-out terms "6 dB" and "3 dB" appear at col. 5, lines 47 and 48, of the patent reprint draft rather than the run-together terms "6dB" and "3dB" as in the corresponding locations in the corrected substitute specification.

signal used by the equalizer in each receiver is supplied from the lookup for that feedback signal". Claim 4 does not earlier (or later) recite a "lookup" separate from the "lookup table". Nor does Claim 1 recite a "lookup" separate from the "lookup table". Accordingly, "lookup" in Claim 4 needs to be changed to "lookup table" in order for Claim 4 to be correct.

Similar comments apply to correcting Claim 9 in the indicated way. In this regard, Claim 1 recites "a stream of multi-dimensional symbols". Claim 9, which also depends directly from Claim 1, recites that the parity check circuit supplies "a parity signal that indicates whether each multi-dimensional is of correct parity". Claim 9 does not earlier (or later) recite a "multi-dimensional" separate from the "multi-dimensional symbols". Nor does Claim 1 recite a "multi-dimensional" separate from the "multi-dimensional symbols". Accordingly, "each multi-dimensional" in Claim 9 needs to be changed to "each multi-dimensional symbol" in order for Claim 9 to be correct.

The phrase "each predefined 1-D symbols" in Claim 19 needs to be changed to "each predefined 1-D symbol" so that the grammar in Claim 19 is correct. Similarly, the phrase "a associated reliability measure" in Claim 25 needs to be changed to "an associated reliability measure" so that the grammar in Claim 25 is correct.

In regard to correcting Claim 31 in the indicated way, Claim 31 is currently recited as depending from Claim 20. This is clearly out of sequence since immediately previous Claim 30 depends from independent Claim 17. That is, Claim 31 would have to depend from Claim 30 or from Claim 17 for Claim 31 to be properly in sequence.

Claim 31 recites that "each pre-equalizer employs feedforward equalization". Claim 20 does not recite any "pre-equalizer". Nor does Claim 17 recite any "pre-equalizer". Claim 30, however, recites that "each 1-D receiver includes a pre-equalizer". Consequently, the dependency of Claim 31 must be changed from Claim 20 to Claim 30 for Claim 31 to have proper antecedent basis with respect to the phrase "each pre-equalizer employs feedforward equalization".

Finally in connection with correcting the Abstract in the indicated way, the Abstract currently recites that "each receiver contains an input section (502-j)" and that the "input section serially filters and digitizes a corresponding receiver input signal (103-j) to generate a corresponding processed signal ( $y_{k,j}$ )". As described at col. 9, lines 40 and 41, reference symbol "103-j" applies to the line which carries input signal " $x_{k,j}$ " to filter/digitizer 502-j

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corresponding to the input section recited in the Abstract. Hence, the Abstract's parenthetical reference symbol for the receiver input signal should be " $x_{k,j}$ " rather than "103-j".

Patentees' Attorney notes that the PTO is reprinting the above patent in the form of a Certificate of Correction. Inasmuch as certain of the corrections arose due to patentee mistake, please charge the \$100.00 fee under 37 CFR 1.20(a) for the Certificate of Correction to Deposit Account 502641. A copy of this request is enclosed.

Please telephone Patentees' Attorney at 650-964-9767 if there are any questions.

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Respectfully submitted,



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